

Form 1449 (Modified)

**Information Disclosure
Statement By Applicant**

(Use Several Sheets if Necessary)

Atty Docket No. CISC601C2
Application No.: 09/435,293
Inventor Gregory G. Raleigh
Group 2634
Filing Date November 5, 1999

RECEIVED
JUN 08 2001
Technology Center 2600

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-Class	Filing Date
CK	A	6,097,771	8/1/2000	Foschini	375	346	7/1/96
	B						
	C						
	D						
	E						

Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
CF	F	2716055	8/11/1995	FR	—	—		
CF	G	0715477	6/5/1996	EP	—	—		
	H							
	I							
	J							

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
CF	K	Seshadri N. et al., "Space-Time Codes for Wireless Communication: Code Construction" IEEE Vehicular Technology Conference, US NY IEEE Vol. Conf. 47 4 May 1997 pages 637-641
	L	
	M	
	N	
Examiner <i>Chul Min Jha</i>		Date Considered <i>9/17/01</i>

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty Docket No. CISC601C2 Application No.: 09/435,293 Inventor GREGORY G. RALEIGH Group <i>2634</i> Unassigned Filing Date November 5, 1999
--	---

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
<i>CF</i>	AA	4,337,376	06/1982	Gruenberg	179	2 EB	12/1979
<i>CF</i>	AB	4,710,944	12/1987	Nossen	375	40	10/1986
<i>CF</i>	AC	5,134,715	07/1992	Parl et al.	455	64	11/1989
<i>CF</i>	AD	5,228,025	07/1993	Le Floch et al.	370	20	01/1991
<i>CF</i>	AE	5,315,584	05/1994	Savary et al.	370	18	12/1991
<i>CF</i>	AF	5,345,599	09/1994	Paulraj et al.	455	49.1	02/1992
<i>CF</i>	AG	5,471,647	11/1995	Gerlach et al.	455	63	04/1993
<i>CF</i>	AH	5,479,444	12/1995	Malkamaki et al.	375	231	02/1994
<i>CF</i>	AI	5,510,779	04/1996	Wishart	342	373	06/1993
<i>CF</i>	AJ	5,515,378	05/1996	Roy, III et al.	370	95.1	12/1991
<i>CF</i>	AK	5,548,819	08/1996	Robb	455	59	08/1995
<i>CF</i>	AL	5,566,209	10/1996	Forssen et al.	375	262	02/1994
<i>CF</i>	AM	5,592,490	01/1997	Barrett et al.	370	310	01/1995

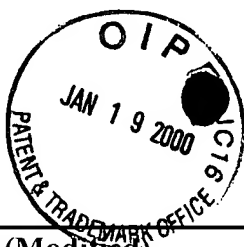
Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
<i>CF</i>	AN	WO 95/22873	08/1995	PCT	1	1	TECH. CENTER 2700 JAN 20 2000	RECEIVED
<i>CF</i>	AO	WO 96/30964	10/1996	PCT	1	1		
<i>CF</i>	AP	WO 98/09381	03/1998	PCT	1	1		

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
<i>CF</i>	AQ	Hirono et al., "Digital terrestrial television broadcasting with OFDM - A study on the performance of single frequency networks" 1996, Int'l Broadcasting Convention, p. 178-183.
Examiner <i>Chieh Min Tsai</i>		Date Considered <i>9/17/01</i>

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty Docket No. CISC601C2 Application No.: 09/435,293 Inventor GREGORY G. RALEIGH Group <i>2634</i> Filing Date November 5, 1999
--	--

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
<i>CF</i>	BA	5,634,199	05/1997	Gerlach et al.	455	63	04/1995
<i>CF</i>	BB	5,642,353	06/1997	Roy, III et al.	370	329	06/1995
<i>CF</i>	BC	5,649,287	07/1997	Forssen et al.	370	312	03/1995
<i>CF</i>	BD	5,691,727	11/1997	Cyzs	342	361	12/1995
<i>CF</i>	BE	5,752,173	05/1998	Tsujimoto	455	137	06/1995
<i>CF</i>	BF	5,809,019	09/1998	Ichihara et al.	370	334	04/1996
<i>CF</i>	BG	5,886,988	03/1999	Yun et al.	370	329	12/1996
<i>CF</i>	BH	5,966,094	10/1999	Ward et al.	342	373	10/1997

Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
<i>CF</i>	BI	WO 98/09395	03/1998	PCT	-	-		
<i>CF</i>	BJ	0253465	03/1987	EPO	-	-		

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
<i>CF</i>	BK	P.A. Voois, "Two-dimensional signal processing for magnetic storage systems", 1993, Ph.D. Thesis, Stanford University, pp. 1-136.
<i>CF</i>	BL	Biglieri et al., "Introduction to trellis coded modulation with applications", 1991, MacMillan Publishing.
<i>CF</i>	BM	P. Lancaster, "Theory of matrices", 1969, Academic Press, Chap. 2.
<i>CF</i>	BN	Raleigh et al., "Spatio-temporal coding for wireless communications", 1996, IEEE Transactions on Communications.
Examiner <i>Chieh Mei Fan</i>		Date Considered <i>9/17/01</i>

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty Docket No. CISC601C2 Application No.: 09/435,293 Inventor GREGORY G. RALEIGH Group <i>2634</i> Filing Date November 5, 1999
--	--

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
	CA						

Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
<i>cf</i>	CB	WO 98/09395	03/1998	PCT	-	-		

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
<i>cf</i>	CC	Justin C.I. Chuang, "Burst coherent demodulation with combined symbol timing, frequency offset estimation and diversity selection", 1991, IEEE, Vol. 39, no. 7, pp. 1157-1164.
<i>cf</i>	CD	Leonard J. Cimini, Jr., "Analysis and simulation of a digital mobile channel using orthogonal frequency division multiplexing", 1985, IEEE, Vol. 33, No. 7, pp. 665-675.
<i>cf</i>	CE	Kouichi Ohkawa, "Performance of multicarrier trellis-coded 8PSK using frequency hopping in rayleigh fading channels", 1994, Not. Conference Publication - Institution of Engineers, Vol. 1, pp. 145-149.
<i>cf</i>	CF	Essam A. Sourour, "Performance of orthogonal multicarrier CDMA in a multipath fading channel", 1996, IEEE, Vol. 44, No. 3, pp. 356-367.
<i>cf</i>	CG	Hirofumi Ichikawa, "Frequency diversity effects in multicarrier digital radio systems", 1991, Electronics and Communications in Japan, Part. 1, Vol. 74, No. 8, pp. 70-77.
Examiner <i>Chieh Min Fan</i>		Date Considered <i>9/17/01</i>

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Form 1449 (Modified)

**Information Disclosure
Statement By Applicant**

(Use Several Sheets if Necessary)

Atty Docket No. CISC601C2
Application No.: 09/435,293
Inventor GREGORY G. RALEIGH
Group *2634* Unassigned
Filing Date November 5, 1999

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
	DA						

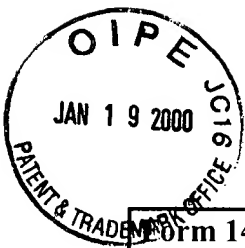
Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
	DB							

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
<i>cf</i>	DC	J. L. Holsinger, "Digital communications over fixed time-continuous channels with memory, with special application to telephone channels", 1964, MIT Research Laboratory Electronics Report, Vol. 430.
<i>cf</i>	DD	Cover et al., "Elements of information theory", 1991, New York: John Wiley, Chp. 2, pps. 12-49, Chp. 8 pps. 183-223, and Chap. 10 pps. 239-265
<i>cf</i>	DE	R.J. Muirhead, "Aspects of multivariate statistical theory", 1982, New York: John Wiley, Chps. 4 and 5.
<i>cf</i>	DF	W.C. Jakes, "Microwave mobile communications", 1974, New York: John Wiley, Chps. 1, 5, and 6.
<i>cf</i>	DG	Braun et al., "A physical mobile radio channel model", 1991, IEEE Vehicular Technology, Vol. 40, pps. 472-482.
<i>cf</i>	DH	Bryson et al., "Applied optimal control", 1968, Washington D.C. Hemisphere Publishing, pps. 24-29.
Examiner <i>Chieh Min Fan</i>		Date Considered <i>9/17/01</i>

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty Docket No.	CISCP601C2
	Application No.:	09/435,293
	Inventor	GREGORY G. RALEIGH
	Group <i>2634</i>	Unassigned
	Filing Date	November 5, 1999

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub- class	Filing Date
	EA						

Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub- class	Translation	
							Yes	No
	EB							

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
<i>CF</i>	EC	Cioffi et al., "Vector coding for partial-response channels", 1990, IEEE Transactions on Information Theory, Vol. 36, pp. 741-762.
<i>CF</i>	ED	Mikael Gudmundson, "Spectral efficiency of a multitone frequency hopping system for personal communication systems", 1994, IEEE Vehicular Technology Conferences, prt. 3, Vol. 3, p. 1650-1654.
<i>CF</i>	EE	T. Aron Gulliver, "Order statistics diversity combining in worst case noise and multitone jamming", 1995, IEEE Vehicular Technology Conference, Vol. 2, pp. 804-809.
<i>CF</i>	EF	R. Monnier, "Digital television broadcasting with high spectral efficiency", 1992, IEEE Conference Pub. No. 358, pps. 380-384.
<i>CF</i>	EG	Enrico Del Re, "Digital Multicarrier demodulator for regenerative communication satellites", 1988, Alta Frequenza, Vol. 57, No. 10, pps. 545-559.
Examiner <i>Chieh Min Fan</i>	Date Considered <i>9/17/01</i>	

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty Docket No. CISC601C2 Application No.: 09/435,293 Inventor GREGORY G. RALEIGH Group <i>2634</i> Filing Date November 5, 1999
--	--

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
	FA						

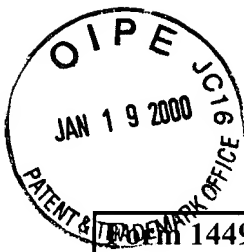
Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
	FB							

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
<i>CF</i>	FC	Youko Omori, "Multicarrier 16QAM system in land mobile communications", 1994, IEICE Transactions on Communications, Vol. E77-B, No. 5, pps. 545-559.
<i>CF</i>	FD	Fulvio Ananasso, "Clock synchronous multicarrier demodulator for multi-frequency TDMA communications satellites", 1990, IEEE International Conference on Communications, Col. 3, pps. 1059-1063.
<i>CF</i>	FE	M. Friese, "Multicarrier modulation with low peak-to-average power ratio", 1996, Electronics Letters, Vol. 32, No. 8, pps. 713-714.
<i>CF</i>	FF	Adil Benyassine, "Optimal subchannel structuring and basis selection for discrete multicarrier modulation", 1995, IEEE Communications Theory Mini-Conference Proceedings, CTMC, pps. 97-101.
<i>CF</i>	FG	M. Sawahashi, "Multicarrier 16QAM transmission with diversity reception", 1996, Electronics Letters, Vol. 32, No. 6, pps. 522-523.
Examiner	<i>Chiel Min Fan</i> Date Considered <i>9/17/01</i>	

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty Docket No.	CISCP601C2
	Application No.:	09/435,293
	Inventor	GREGORY G. RALEIGH
	Group <i>2634</i>	Unassigned
	Filing Date	November 5, 1999

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
	GA						

Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
	GB							

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
<i>CF</i>	GC	Flavio Daffara, "A new frequency detector for orthogonal multicarrier transmission techniques", IEEE 45 th Vehicular Technology Conference, pps. 804-809.
<i>CF</i>	GD	C.E. Shannon, "Mathematical theory of communications: Part I and Part II", 1948, The Bell System Journal, pps. 379-423, 623-656.
<i>CF</i>	GE	Fectel et al., "Optional feedforward estimation of frequency-selective fading radio channels using statistical channel information", 1992, in Proc. SUPERCOMM/ICC '92, Vol. 2.
<i>CF</i>	GF	Brandenburg et al., "Capacity of the gaussian channel with memory: the multivariate case", 1993, Bell System Technical Journal, Vol. 53, pps. 745-78.
<i>CF</i>	GG	Cheng et al., "Gaussian multiaccess channels with ISI: Capacity region and multiuser water-filling", 1993, IEEE Trans. Inform. Theory, Vol. 39(3), pps. 773-785.
<i>CF</i>	GH	J. Salz, "Digital transmission over cross-coupled linear channels", 1985, AT&T Tech. Journal, Vol. 64(6), pps. 1147-1159,
Examiner	<i>Chieh Min Fan</i> Date Considered <i>9/17/01</i>	

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty Docket No.	CISCP601C2
	Application No.:	09/435,293
	Inventor	GREGORY G. RALEIGH
	Group <i>2634</i>	Unassigned
	Filing Date	November 5, 1999

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
	HA						

Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
	HB							

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
<i>cf</i>	HC	A. Duel-Hallen, "Equalizers for multiple input multiple output channels and PAM systems with cyclostationary input sequences", 1992, IEEE Journal on Sel. Areas in Comm., Vol. 10(3), pps. 630-639.
<i>cf</i>	HD	Yang et al., "On joint transmitter and receiver optimization for multiple-input multiple-output (MIMO) transmission systems", 1994, IEEE Trans. Commun., Col. 42-(12), pps. 3221-3231.
<i>cf</i>	HE	Yang et al., "Joint transmitter-receiver optimization for multi-input multi-output systems with decision feedback", 1994, IEEE Trans. Information Theory, Vol. 40(5), pps. 1334-1347.
<i>cf</i>	HF	Cox et al., "Distributions of multipath delay spread and average excess delay for 910 Mhz urban mobile radio paths", 1975, IEEE Trans. Antennas and Prop., Vol. Ap-23, pps. 206-213.
<i>cf</i>	HG	Weinstein et al., "Data transmission by frequency-division multiplexing using the discrete fourier transform", 1971, IEEE transactions on communications, vol. 19(5), pps. 628-634.
Examiner <i>Chul Min Fan</i>		Date Considered <i>9/17/01</i>

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

RECEIVED
 JAN 20 2000
 TECH CENTER 2100



Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty Docket No. CISC601C2 Application No.: 09/435,293 Inventor GREGORY G. RALEIGH Group <i>2634</i> Filing Date Unassigned November 5, 1999
--	--

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub- class	Filing Date
	IA						

Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub- class	Translation	
							Yes	No
	IB							

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
<i>cf</i>	IC	Ruiz et al., "Discrete multiple tone modulation with coset coding for the spectrally shaped channel", 1992, IEEE Trans. Commun, Vol. 40(6), pps. 1012-1029.
<i>cf</i>	ID	R.M. Gray, "On the asymptotic eigenvalue distribution of toeplitz matrices", 1972, IEEE Trans. Information Theory, Vol. 18, pps. 725-730.
<i>cf</i>	IE	G. Forney, "Maximum-likelihood sequence estimation of digital sequences in the presence of intersymbol interference", 1972, IEEE Trans. Inform. Theory, Vol. IT-18(3), pps. 363-378,
Examiner	Date Considered	
<i>Chieh Min Fan</i>	<i>9/17/01</i>	

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

RECEIVED
JAN 20 2000
TECH CENTER 2700